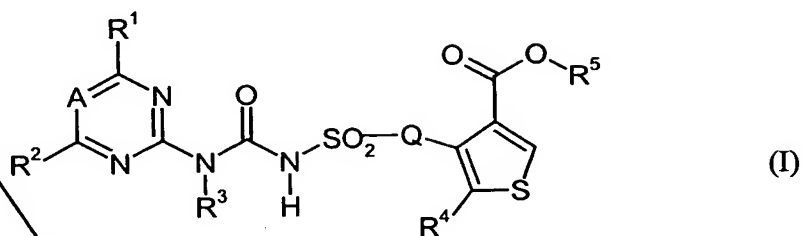


Patent Claims

Compounds of the general formula (I)



in which

A represents nitrogen or a CH grouping,

Q represents a single bond or represents NH,

R¹ represents hydrogen, halogen or in each case optionally substituted alkyl, alkoxy, alkylthio, alkylamino, dialkylamino, aryloxy or heterocycloxy,

R² represents hydrogen, halogen or in each case optionally substituted alkyl, alkoxy, alkylthio, alkylamino, dialkylamino, aryloxy or heterocycloxy,

R³ represents hydrogen or optionally substituted alkyl,

R⁴ represents halogen or optionally substituted alkyl and – if Q represents NH – also represents hydrogen, and

R⁵ represents hydrogen or in each case optionally substituted alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkylalkyl or heterocyclyl.

contd.
a¹

and salts of compounds of the formula (I).

2. Compounds according to Claim 1, characterized in that

5 R¹ represents hydrogen, represents halogen, represents in each case optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl, alkoxy, alkylthio, alkylamino or dialkylamino having in each case 1 to 4 carbon atoms in the alkyl groups, or represents in each case optionally cyano-, halogen-, C₁-C₄-alkyl- or C₁-C₄-alkoxy-substituted phenoxy, oxetanyloxy, furyloxy or tetrahydrofuryloxy,

10 R² represents hydrogen, represents halogen, represents in each case optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl, alkoxy, alkylthio, alkylamino or dialkylamino having in each case 1 to 4 carbon atoms in the alkyl groups, or represents in each case optionally cyano-, halogen-, C₁-C₄-alkyl- or C₁-C₄-alkoxy-substituted phenoxy, oxetanyloxy, furyloxy or tetrahydrofuryloxy,

15 R³ represents hydrogen or represents optionally C₁-C₄-alkoxy-, C₁-C₄-alkyl-carbonyl- or C₁-C₄-alkoxy-carbonyl-substituted alkyl having 1 to 4 carbon atoms,

20 R⁴ represents optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl having 1 to 6 carbon atoms and – if Q represents NH – also represents hydrogen, and

25 R⁵ represents hydrogen, represents optionally cyano-, halogen- or C₁-C₄-alkoxy-substituted alkyl having 1 to 6 carbon atoms, represents in each case optionally halogen-substituted alkenyl or alkynyl having in each case 2 to 6 carbon atoms, represents in each case optionally cyano-, halogen- or C₁-C₄-alkyl-substituted cycloalkyl or cycloalkyl-

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contd.
a¹

alkyl having in each case 3 to 6 carbon atoms in the cycloalkyl groups and optionally 1 to 4 carbon atoms in the alkyl moiety, or represents in each case optionally cyano-, halogen-, C₁-C₄-alkyl- or C₁-C₄-alkoxy-substituted oxetanyl, furyl or tetrahydrofuryl.

5

3. Compounds according to Claim 1, characterized in that

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R¹ represents hydrogen, fluorine, chlorine, bromine, iodine, or represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylamino, ethylamino, n- or i-propylamino, dimethylamino or diethylamino,

15

R² represents fluorine, chlorine, bromine, or represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, methoxy, ethoxy, n- or i-propoxy, methylthio, ethylthio, n- or i-propylthio, methylamino, ethylamino, n- or i-propylamino, dimethylamino or diethylamino,

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R³ represents hydrogen or represents in each case optionally methoxy-, ethoxy-, n- or i-propoxy-, acetyl-, propionyl-, n- or i-butyroyl-, methoxycarbonyl-, ethoxycarbonyl-, n- or i-propoxycarbonyl-substituted methyl or ethyl,

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R⁴ represents in each case optionally cyano-, fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, and

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R⁵ represents hydrogen, represents in each case optionally cyano-, fluorine-, chlorine-, methoxy-, ethoxy-, n- or i-propoxy-substituted methyl, ethyl, n- or i-propyl, n-, i-, s- or t-butyl, represents in each

contd.
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case optionally fluorine-, chlorine- or bromine-substituted propenyl, butenyl, propinyl or butinyl, or represents in each case optionally cyano-, fluorine-, chlorine-, bromine-, methyl-, ethyl-, n- or i-propyl-substituted cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclobutylmethyl, cyclopentylmethyl or cyclohexylmethyl.

4. Compounds according to Claim 1, characterized in that

R¹ represents hydrogen, fluorine, chlorine, bromine, represents in each case optionally fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, methoxy, ethoxy, methylthio, ethylthio, methylamino, ethylamino, or represents dimethylamino,

R² represents fluorine, chlorine, bromine, represents in each case optionally fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, methoxy, ethoxy, methylthio, ethylthio, methylamino or ethylamino, or represents dimethylamino,

R³ represents hydrogen or methyl,

R⁴ represents in each case optionally fluorine- or chlorine-substituted methyl, ethyl, n- or i-propyl, and

R⁵ represents in each case optionally fluorine-, chlorine-, methoxy- or ethoxy-substituted methyl, ethyl, n- or i-propyl, or represents in each case optionally fluorine- or chlorine-substituted propenyl or propinyl.

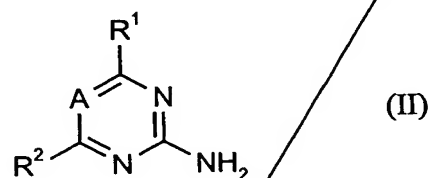
5. Sodium, potassium, magnesium, calcium, ammonium, C₁-C₄-alkyl-ammonium, di-(C₁-C₄-alkyl)-ammonium, tri-(C₁-C₄-alkyl)-ammonium, tetra-(C₁-C₄-alkyl)-ammonium, tri-(C₁-C₄-alkyl)-sulphonium, C₅- or C₆-cyclo-

contd.
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alkyl-ammonium and di-(C₁-C₂-alkyl)-benzyl-ammonium salts of compounds according to any of claims 1 to 4.

6. Process for preparing compounds according to any of Claims 1 to 5, characterized in that

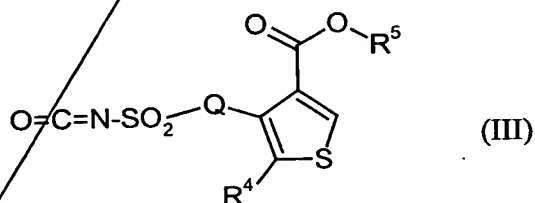
(a) aminoazines of the general formula (II)



in which

A, R¹ and R² are each as defined in any of Claims 1 to 4

are reacted with thienyl(amino)sulphonyl isocyanates of the general formula (III)



in which

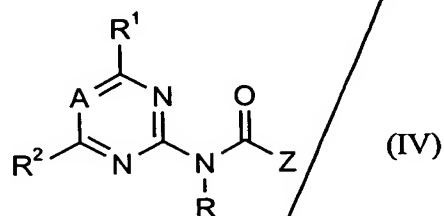
Q, R⁴ and R⁵ are each as defined in any of Claims 1 to 4,

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

or that

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(b) substituted aminoazines of the general formula (IV)



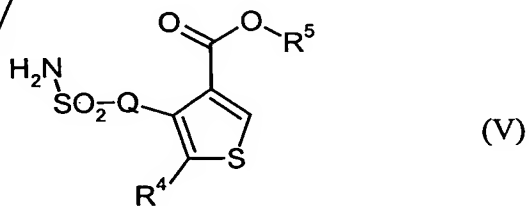
in which

A, R¹ and R² are each as defined in any of Claims 1 to 4,

Z represents halogen, alkoxy or aryloxy and

R has the meaning given for R³ in any of claims 1 to 4 or represents the grouping -C(O)-Z,

are reacted with thiophene derivatives of the general formula (V)



in which

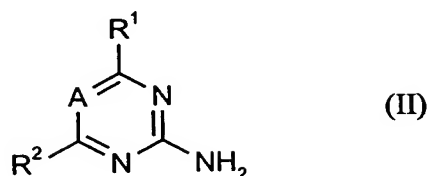
Q, R⁴ and R⁵ are each as defined in any of Claims 1 to 4,

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

or that

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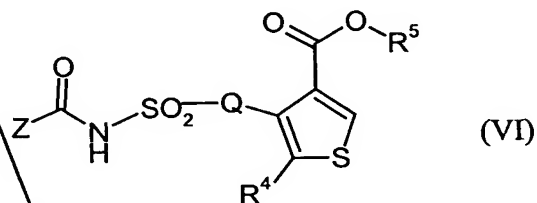
(c) aminoazines of the general formula (II)



in which

A, R¹ and R² are each as defined in any of Claims 1 to 4,

are reacted with thiophene derivatives of the general formula (VI)



in which

Q, R⁴ and R⁵ are each as defined in any of Claims 1 to 4 and

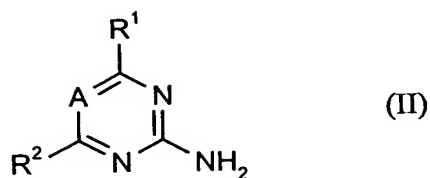
Z represents halogen, alkoxy or aryloxy,

if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

or that

(d) aminoazines of the general formula (II)

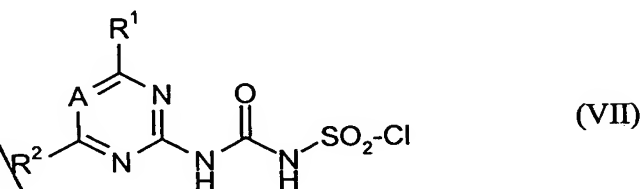
contd.
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in which

A, R¹ and R² are each as defined in any of Claims 1 to 4,

are reacted with chlorosulphonyl isocyanate, if appropriate in the presence of a diluent, and the resulting chlorosulphonylaminocarbonylamino-azines of the general formula (VII)

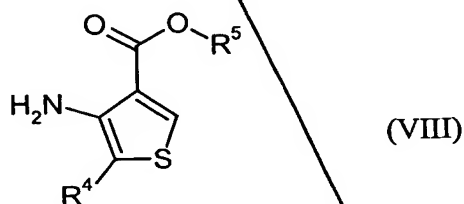


in which

A, R¹ and R² are each as defined in any of Claims 1 to 4

are - after intermediate isolation or "in situ" -

reacted with substituted aminothiophenes of the general formula (VIII)



in which

R⁴ and R⁵ are each as defined in any of Claims 1 to 4,

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control.
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if appropriate in the presence of a reaction auxiliary and if appropriate in the presence of a diluent,

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and the compounds of the formula (I) obtained by process (a), (b), (c) or (d) are, if appropriate, converted by customary methods into salts.

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7. Method for controlling undesirable vegetation, characterized in that at least one compound according to any of Claims 1 to 5 is allowed to act on ~~undesirable plants and/or their habitat.~~

8. Use of at least one compound according to any of Claims 1 to 5 for controlling undesirable plants.

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9. ~~Herbicidal composition, characterized in that it comprises a compound according to any of Claims 1 to 5 and customary extenders and/or surfactants.~~

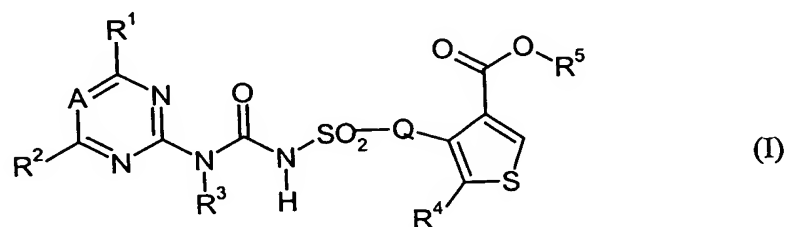
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Substituted thienyl(amino)sulphonylureas

Abstract

The invention relates to novel substituted thienyl(amino)sulphonylureas of the general formula (I)



in which A, Q, R¹, R², R³, R⁴ and R⁵ are each as defined in the description,

to processes for their preparation and to their use as herbicides.